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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT TRANSMITTAL FORM

Applicant(s): Singer et al.
Serial No.: 10/625,254
Filed: July 23, 2003
For: COLLECTOR HAVING UNUSED REGION FOR ILLUMINATION
SYSTEMS USING A WAVELENGTH ≤ 193 NM
Art Unit: 2882
Examiner: Not Yet Assigned
Attorney Docket No.: 637.0031USX
Customer No.: 27623 Attorney Docket: 637.0031USX

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

We are enclosing:

1. Copy of International Preliminary Examination Report, dated February 2, 2004;
2. Transmittal letter in duplicate; and
3. Postcard.

Please charge any additional fees or credit any such fees, if necessary to Deposit Account No. 01-0467 in the name of Ohlandt, Greeley, Ruggiero & Perle. A duplicate copy of this sheet is attached.

Respectfully submitted,

Charles N. J. Ruggiero
Reg. No. 28,468
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Date: May 19, 2004

CERTIFICATE OF MAILING

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, ON MAY 19, 2004.

Mary R. Charles
NAME

SIGNATURE

5/19/04
DATE

DfS K11

PATENT COOPERATION TREATY

PCT/EP02/00608

PCT
NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 72.2)

From the INTERNATIONAL BUREAU

To:

WEITZEL & PARTNER
 Friedenstr. 10
 89522 Heidenheim
 Germany

Eingang
 Dr. Weitzel & Partner

- 6. Feb. 2004

RL: VT:
 Endtermin:

Date of mailing (day/month/year) 02 February 2004 (02.02.04)	Applicant's or agent's file reference P 16008WO/02002P PCT
International application No. PCT/EP02/00608	International filing date (day/month/year) 23 January 2002 (23.01.02)
Applicant CARL ZEISS SMT AG et al	

IMPORTANT NOTIFICATION

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

JP, KR, US

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

EP

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.89.75	Authorized officer A. ZOLTANSKI (Fax : 338 89 75) Telephone No. (41-22) 338 8608
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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P 16008WO/02002P PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2002/000608	International filing date (day/month/year) 23 January 2002 (23.01.2002)	Priority date (day/month/year) 23 January 2001 (23.01.2001)
International Patent Classification (IPC) or national classification and IPC G21K 1/06		
Applicant CARL ZEISS SMT AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 31 July 2002 (31.07.2002)	Date of completion of this report 15 July 2003 (15.07.2003)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2002/000608

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-41, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-27, filed with the letter of 27 June 2003 (27.06.2003)
- ☒ the drawings:
pages 1/19-19/19, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 27

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 27
are so unclear that no meaningful opinion could be formed (*specify*):

SEE ADDITIONAL SHEET

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: BOX III

**Non-establishment of opinion with regard to novelty,
inventive step and industrial applicability**

1. Claim 27 is drafted in such a way that the use of the EUV projection lighting apparatus claimed in Claim 26 represents only an option ("in particular semiconductor components with an EUV projection lighting apparatus as per Claim 26"). The claim is therefore drafted so broadly that it claims only a method for producing microelectronic components in their most general form.
2. Claim 27 therefore does not meet the requirements of PCT Article 6 and is so unclear that a reasoned statement under PCT Article 35(2) with regard to the novelty, inventive step and industrial applicability of the claimed subject matter cannot be established.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

2. Citations and explanations

1. None of the searched documents anticipates all the features of the current Claims 1-26. The subjects of these claims should therefore be considered novel.

There are also no objections with regard to industrial applicability.

2. The present application concerns a collector for lighting systems with a wavelength ≤ 193 nm and having a plurality of rotationally symmetrical mirror shells, at least one area that is not used by a light beam being formed between at least two adjacent mirror shells.

Document US-A-5 192 869 (see the abstract; column 7, lines 46-65; column 9, lines 14-32; and Figures 4, 10 and 26) describes a lens with a plurality of rotationally symmetrical, channel-building elements that can be designed as a collector for short-wave radiation, and in which the radiation can be reflected in the channels. That document also discloses the concept of a cooling system (see Figure 26) that uses gas or liquid in an unused area

between the channels.

The present application aims at providing an unused area between rotationally symmetrical mirror shells, in which further collector components are arranged. This requires other cooling measures than in the case of a cooling system of the rotationally symmetrical, channel-forming elements of the known Kumakhov lens with gas or liquid, even if in a special embodiment these components are cooling components. In particular, the surface parameters and position of the mirror shells must be designed accordingly in order to make it possible to provide further components in the unused area.

The subject matter of independent Claim 1 therefore also meets the requirements for inventive step.

3. Dependent Claims 2-26 are dependent directly or indirectly on independent Claim 1 and therefore meet the requirements for such claims.

It is assumed that Claim 21 refers back to Claim 20. Since Claim 21 cannot refer back to itself, the present wording must be an obvious error.

4. The following defects would have to be remedied:

- 1) The features, in particular of the independent claims, are not followed by reference signs in parentheses (PCT Rule 6.2(b)).

Subparagraphs in the claims, such as 1.1, 1.2, etc., should be deleted (and possibly replaced by a separator such as "-") in order to avoid

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confusion with regard to the numbering of the claims.

3. The description should be brought into line with the present claims.